

# UNPACKING THE CURRICULUM

## Step 1: Identify Concepts/Nouns

Which ideas/topics do students need to know? Which pre-requisites are needed?

FORCE, ARROWS PRE-REQ:

NET FORCE, BAL, UNBAL, ACCELERATION

INERTIA, MASS, FRICTION

NEWTON'S 1<sup>st</sup> LAW

NEWTON'S 2<sup>nd</sup> LAW NEWTON'S

NEWTON'S 3<sup>rd</sup> LAW

GRAVITY

WEIGHT

## Objective

How is the objective explicitly stated in the SCOS?

2.02 INVESTIGATE AND

ANALYZE FORCES AS

INTERACTIONS THAT CAN

CHANGE MOTION.

APPLYING SOLVE (2<sup>nd</sup> LAW)

REMEMBER IDENTIFY (EXAMPLE LAWS)

APPLYING MEASURE FORCES

APPLYING MANIPULATE  $F=ma$

ANALYSIS DISTINGUISH (INERTIA FROM MASS)

EVALUATION & COMPARISON

## Step 2: Identify Skills/Verbs

How will students demonstrate what they know?

Which other verbs may be used?

What are the thinking levels?

## Step 3: Examine Assessment

Which concepts/skills are embedded?

What prior knowledge is needed?

MASS - MEASURING

FINDING ACCELERATION

SOLVING MATH EQUATIONS

ALGEBRA

CROSS MULT

UNITS & HOW THEY COMBINE

TRIANGLES

NET FORCE IS THE TOTAL OF ALL PUSHES & PULLS.

BALANCED FORCE KEEP MOTION

THE SAME, UNBALANCED FORCES CHANGE MOTION.

OBJECTS ARE LAZY, THEY KEEP DOING WHAT THEY WERE DOING. (= INERTIA)

MASS INCREASES INERTIA & MAKES OBJECT MORE STUBBORN. (BACK)

## Step 4: Create Student Learning Targets

How can the concepts and skills be combined to make student-friendly statements?

In what sequence should they be arranged?

DPS

Assessment for Learning

Spring 2011

MORE FORCE MAKES MORE ACCELERATION, MORE MASS MAKES ACCELERATION HARDER. EX: LIFT SMALL → LARGER WEIGHTS. USE AN EXAMPLE FORCE TO PULL CARTS WITH 0, 1, AND 2 kg TO SHOW ACCELERATIONS.

MAKE GRAVITY STRONGER.

FORCES COME IN PAIRS - AN ACTION AND A REACTION. EX: BALLOONS PUSHING OUT AIR, 2 HAND PUSH MASS DOESN'T CHANGE, BUT WEIGHT CHANGES DEPENDING ON WHERE YOU ARE. HEAVIER PLANETS & CLOSER MASSES

9/14/11